***NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1.6: Graphing Linear inequalities***

**To Graph an Equation:**

1. Place a closed dot on the value of the variable.

Example: x = 2

**To Graph an Inequality:**

1. **>** Place an open dot on the value of the variable and shade to the right.

Example: x > 2

2. **<** Place an open dot on the value of the variable and shade to the left.

Example: x < 2

3. **≥** Place a closed dot on the value of the variable and shade to the right.

Example: x ≥ 2

4. **≤** Place a closed dot on the value of the variable and shade to the left.

Example: x ≤ 2

***NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1.6: Solving Linear Inequalities***

Follow same procedure as in solving equations \*EXCEPT in the last step.

If you multiply or divide by a negative number,

be sure to reverse the direction of the inequality signs.

**Example:** 3x > -18 **Example:** -4x > 20

GRAPH: GRAPH:

**Example 3:** 8 (2 – *x*) ≤ -4(*x* – 5) GRAPH:

|  |  |
| --- | --- |
| ***Solve and graph the solution on a number line*** | |
| 1) *x* + 4 < 18 | 2) -6 – *x* ≥ -7*x* + 12 |
| 3) -9 ≥ 5 + *x* | 4) 5(2*x* – 3) ≥ -15 + 20*x* |
| 5) -8*x* ≤ 40 | 6) 8 – 3*x* < 44 |
| 7) | 8) -49 ≥ 7(2*x* + 3) |
| 9) 3(4*x* – 5) < -3*x* | 10) 3*x* – 2(*x* – 5) < 2(*x* + 4) |